COAL MINING

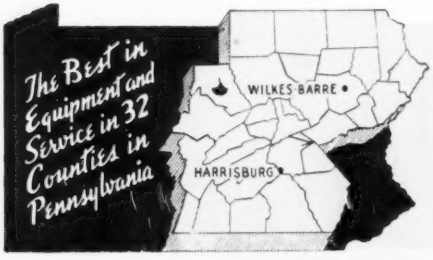
JUNE, 1951 — *"The Picture-Book of the Industry"* — VOLUME 28, No. 6

Handiest tool in mining!

Just name your job—stripping overburden, building roads, feeding draglines, cleaning up around shovels—a "Caterpillar" Bulldozer does it better. "Caterpillar" 'dozers have won world-fame as the handiest mining tool ever devised.

This picture shows a cable-controlled "Caterpillar" No. 8S Bulldozer Blade teamed up with a "Caterpillar" Diesel D8 Tractor, a perfectly matched unit. It is removing overburden at a strip mine for Donahey & Company of Snow Shoe, Pa.

Call or write us today for more information. Our salesmen will be glad to tell you the advantages of matched equipment.



CLEVELAND BROTHERS EQUIPMENT COMPANY

"Caterpillar" Distributors

FRACKVILLE	HARRISBURG	WILKES-BARRE
Route 122 (State Road)	Route 322 (Hershey Road)	Route 309 (Ashley By-pass)
Phone 701	Phone 6-7981	Phone 2-8141

Published monthly by Modern Mining Publishing Company. Publication Office—Advance Printing & Litho Co., Erie, Pa. Editorial and Executive Offices—5403 Clairton Blvd., Pittsburgh 27, Pa., P. F. JASIK, Publisher & Editor. Price: In the United States, $2.00 per year; all other countries, $5.00. Single copy, 50 cents. Entered as second-class matter at the Post Office at Pittsburgh, Pennsylvania, under the act of March 3, 1879. Application for reentry applied for at the Post Office at Erie, Pennsylvania.

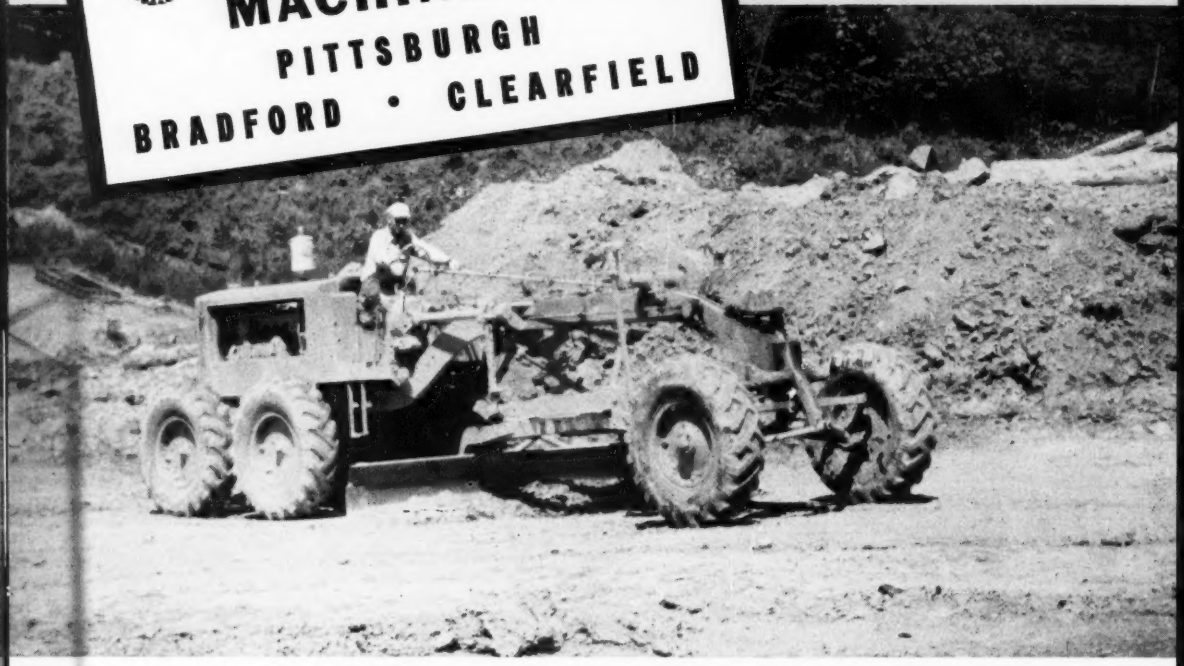
PURCHASED FROM

BECKWITH MACHINERY CO.

PITTSBURGH

BRADFORD • CLEARFIELD

THIS SIGN



When you see the sign "Purchased from BECKWITH MACHINERY CO." on construction equipment, then close by, you'll find a satisfied owner. Top-grade equipment and service have *built* our business . . . that's how we intend to *stay* in business.

We're specialists in "Caterpillar" equipment. Our servicemen are factory-trained — know construction equipment from A to Z. Our shops are set up for fast, accurate service. Our tools and equipment are designed to handle service and rebuilding jobs efficiently . . . on the spot or in the shop. Day or night, when you need help, our servicemen will be on the job in short order.

But why wait until you're in "power trouble" to call us? Right now while you're thinking about it, give us a call to check over your equipment. We can often spot trouble before it occurs . . . a minor repair or adjustment *now* can save you downtime *later* on.

Call us when you need the best in equipment . . . call us when you want fast, dependable service. Make our locations *your* construction headquarters.

CATERPILLAR

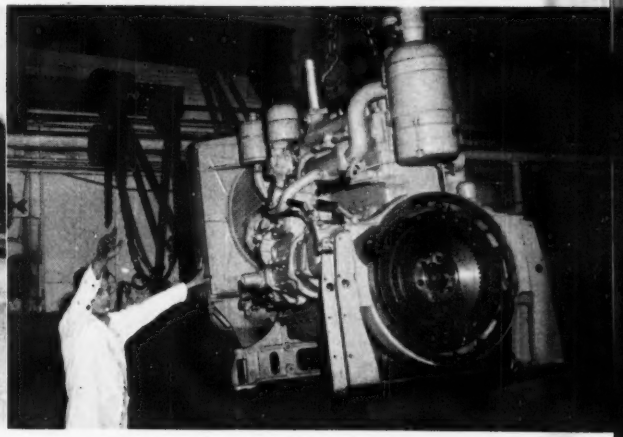
REG. U. S. PAT. OFF.

MEANS *Backed-*

TO THE HILT BY

BECKWITH

HERE'S HOW WE *Back* THE EQUIPMENT WE SELL



Our trained field servicemen are ready to roll on short notice to help you out of power trouble. This is your assurance of minimum down-time . . . of quick, accurate, on-the-spot service.

Beckwith service shops are laid out for faster, more accurate service. Modern in every detail, equipped with the latest in time-saving tools, they are your assurance of less down-time, lower repair and maintenance costs.

BECKWITH
MACHINERY COMPANY

6550 Hamilton Ave. - PITTSBURGH - Phone MOntrose 1-6900

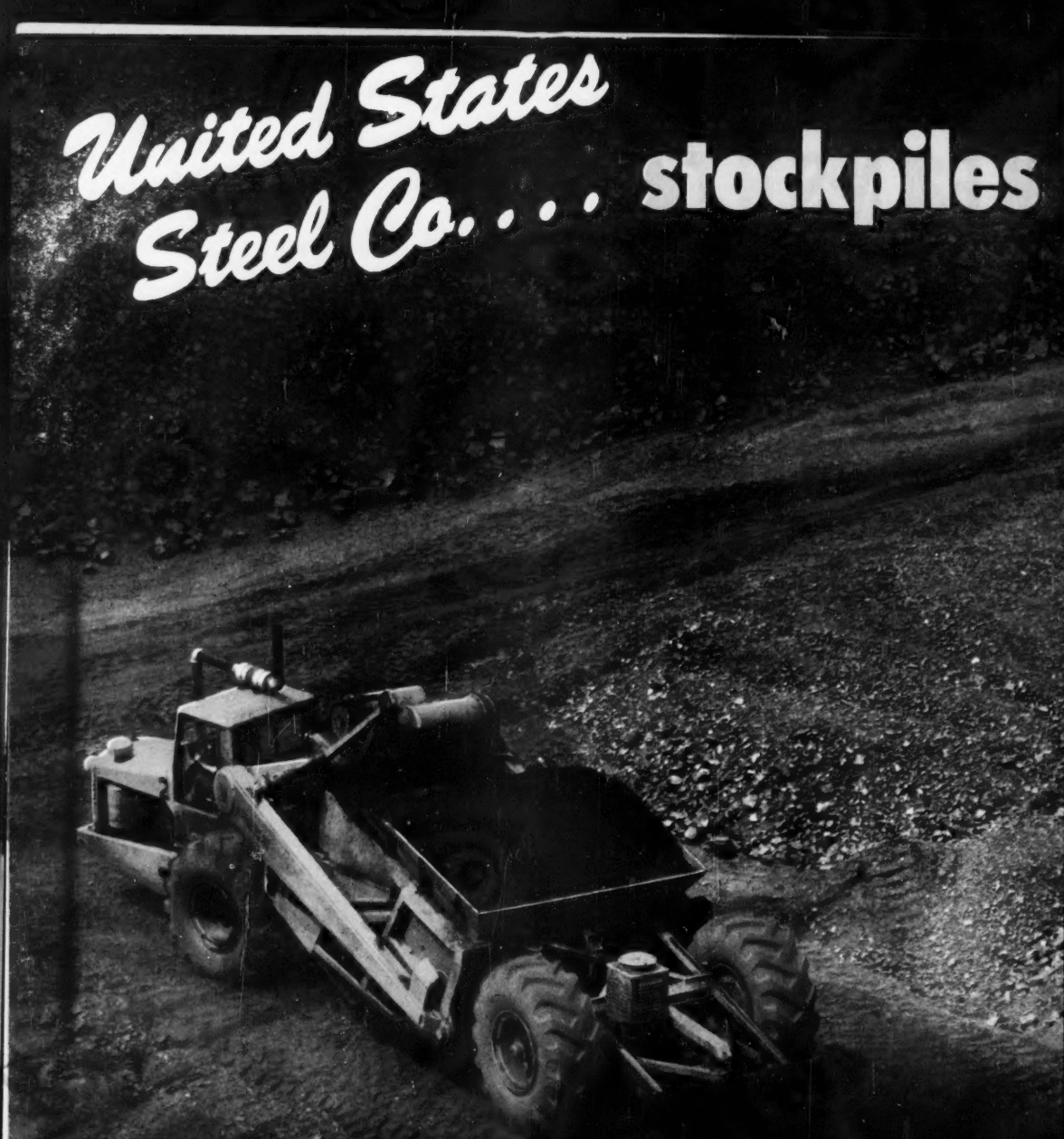
BRANCHES — PARTS STORES

BRADFORD, PA.	CLEARFIELD, PA.	FARRELL, PA.	BELMONT, OHIO
361-369 Congress St.	Old Town Rd.	E. Broadway	906 John St.
Phone 3166	Phone 5-9635	Phone Sharon 3572	Phone Bethesda 4911

BECKWITH MACHINERY COMPANY

"CATERPILLAR" DIESEL TRACTORS, ENGINES, MOTOR GRADERS, EARTHMOVING EQUIPMENT • HYSTER WINCHES AND CRANES • TRACKSON SHOVELS, PIPE LAYERS • BUCYRUS-ERIE SPUDDERS AND SHOVELS • CHICAGO PNEUMATIC COMPRESSORS AND AIR TOOLS • ATHEY WAGONS, MOBILOADERS, FORCE-FEED LOADERS • MARLOW PUMPS • MARTIN TRAILERS • BRODERICK AND BASCOM WIRE ROPE • JAHN HEAVY DUTY TRAILERS • McKIERNAN TERRY PILE HAMMERS AND EXTRACTORS

United States Steel Co.... stockpiles



Carries 16 tons, drives anywhere, on or off property
Rolling on giant 21.00 x 25 rubber tires, one-man Tournapull shuttles to coal stockpile . . . hauls average 72 loads or 1231 tons per day. At stockpile it dumps on-the-run . . . spreads evenly and fast . . . returns for reloading at speeds up to 35 m.p.h. Drives anywhere . . . cross lots, over railroad tracks, other obstructions on or off property, without damage to tires or surface crossed.

Tournapull, Tournadozer—Trademark Reg. U.S. Pat. Off. CH10

LETOURNEAU LET EQUIPMENT

FURNIVAL MACHINERY CO.

Lancaster Avenue at 54th St., PHILADELPHIA 31, PA.
S. E. Cor. North Cameron & Forster Sts., HARRISBURG, PA.
Water St., NEW PHILADELPHIA, PENN. *(Pottsville Region)*

coal with TOURNAPULLS

3693 tons of coal per day handled at Clairton, Pennsylvania Mill

To assure steady operations for peak steel production months ahead, United States Steel Company brought in 3 high-speed, rubber-tired C Tournapulls to stockpile mine run and washed coal at their Clairton, Pennsylvania, mill.

The 3 "C's", on rental from a Pittsburgh contractor, were delivered to mill site and went right to work without delay. Here's what they accomplished in a typical week: working over average haul distances and grades in both good and bad weather, "C's" teamed up and stockpiled 3693 tons, hauling 216.6 loads per day, based on automatic count by electric load counter on each machine. That's an average daily production for each machine of 72.2 loads or 1231 tons on a round trip shuttle between loading station and stockpile. These high-speed machines were always ready to go — at a moment's notice — operator simply got in and drove off without delay, continuing stockpiling as coal shipments arrived.

Reduces fire hazard

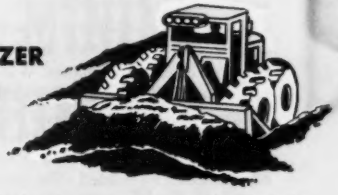
Power-proportioning differential plus extra traction of big low-pressure, 21.00 x 25 tires gave an exceptionally smooth operating machine that rolled easily over the coal without rutting in or breaking it up. Two-foot wide tires leave hard-packed surface behind them . . . give excellent compaction to reduce possibility of spontaneous combustion. Operator controls all steering, loading and dumping operations electrically from conveniently located fingertip dashboard switches — response is sure, instantaneous.

Ready to work anywhere, easy to rent or sell, Tournapulls can always be transferred with operator to other assignments . . . grading, leveling, dump and road maintenance, or for bulk material handling elsewhere on property. During off-season periods requiring no stockpiling, this equipment can be profitably rented with or without operator. Tournapulls require no flatbeds for shipment . . . drive away under their own power and can be on the job 5 miles away in as little as 10 to 15 minutes.

When you buy mobile LeTourneau Tournapulls or Tournadozers, no expensive structures are required . . . you have complete flexibility to expand, shrink or abandon storage area as needed. When not needed, these standard earthmovers can be applied to speed other company operations or readily sold for a good price, thereby protecting your initial investment.

If your customers have stockpiling problems, have them get in touch with the nearest LeTourneau Distributor. He can give them full information on this flexible rubber-tired equipment, recommend tonnage contractors, or help locate day rental equipment. Use coupon if you wish information on LeTourneau stripping or coal hauling units for mine application.

TOURNADOZER
2 to 3 times faster than crawler



As top tool for all dozing, its correctly curved 2½-yd. blade rolls big quantities of dirt, coal or other material per pass. When not busy stockpiling, is also top utility tool for plant maintenance or rental and all year 'round use. Gives you speeds up to 19 m.p.h. forward and reverse . . . is 2 to 3 times more productive than crawler and drives anywhere. Smaller rubber-tired dozer also available.

DRAVO-DOYLE CO.
2601 Preble Avenue
N. S. PITTSBURGH 33, PA.

BALDWIN MACHINERY CO., INC.
1549 Hansford St., CHARLESTON, W. VA.
307 North Avenue, CLARKSBURG, W. VA.

COAL MINING

Vol. XXVIII JUNE, 1951 No. 6

Contents

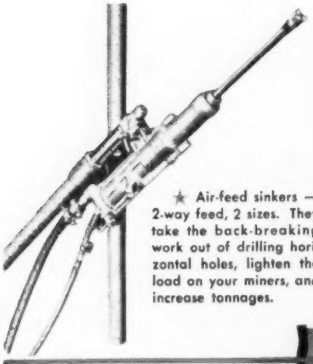
Published Monthly By

MODERN MINING PUBLISHING COMPANY

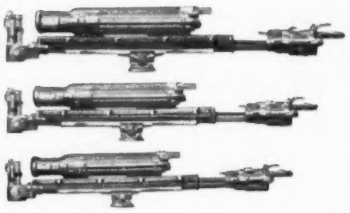
Publication Office—1118 Chestnut St., Erie, Pa.

Editorial Offices—5403 Clairton Blvd., Pittsburgh 27, Pa.

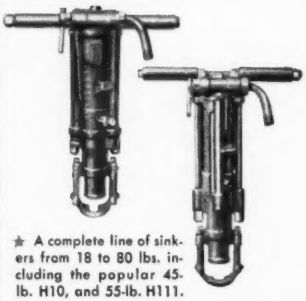
P. F. JASIK, Publisher and Editor



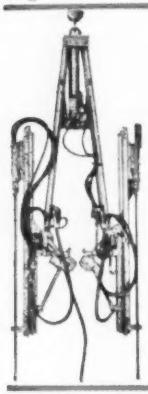
★ Air-feed sinkers — 2-way feed, 2 sizes. They take the back-breaking work out of drilling horizontal holes, lighten the load on your miners, and increase tonnages.



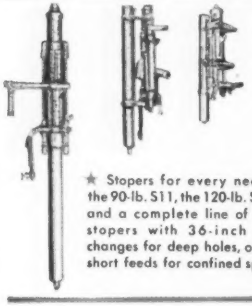
★ Power-feed and hand-cranked drifters. Dependable, powerful, and fast. Ideal for columns and jumbos alike.



★ A complete line of sinkers from 18 to 80 lbs. including the popular 45-lb. H10, and 55-lb. H111.



★ The SDR 34 shaft sinker for faster shaft sinking. Fully closed it's 5'6" between drill centers; open 19'3". All adjustments quickly made with air motor.



★ Stopers for every need — the 90-lb. S11, the 120-lb. SS-22, and a complete line of offset stopers with 36-inch steel changes for deep holes, or with short feeds for confined spaces.

It's Le Roi-CLEVELAND for *Rock Drills You Can Count On*

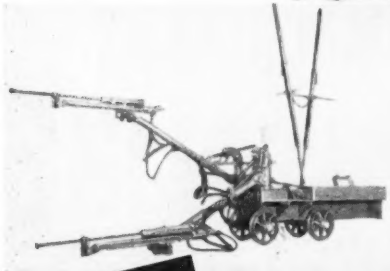
. . . . . fast-drilling, dependable favorites of mining men since 1906

Of course, you know that Le Roi-CLEVELAND builds the popular, easy-holding H10 and H111 sinkers... the fast-drilling PD24, 25, and 14 power feed drifters . . . the S11 and SS22 stopers with trip rotation for easier handling . . . and a mine jumbo that lets you drill out your rounds faster, with greater safety.

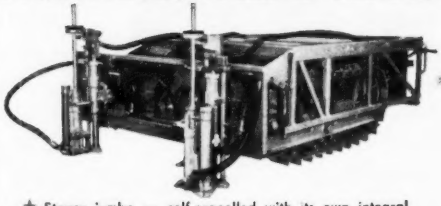
But did you know that Le Roi-CLEVELAND was responsible for some famous "firsts"? Here are a few of them—work-savers that help your miners increase their man-shift production: the air-feed sinker, the offset stoper, the shaft sinker, the stoper jumbo.

So if you have a job of drilling to do—do it with Le Roi-CLEVELAND machines. You can count on them. They're built for speed. And they're built to stay underground, too — where you can use this speed to do more work and cut your costs.

Detailed information about the complete Le Roi-CLEVELAND rock drill line is yours for the asking. Just write us.



★ The famous MDR Jumbo with air-motor poweredbooms for quicker set-ups, greater safety, faster rounds.



★ Stoper jumbo — self-propelled with its own integral dust-collection system for positive dust control, the latest thing for roof bolting.

LE ROI COMPANY

RD-39

CLEVELAND ROCK DRILL DIVISION
12500 Berea Road, Cleveland 11, Ohio
Plants: Milwaukee, Cleveland and Greenwich, Ohio

Stripping overburden at Hanna Coal Company with ESCO 4½-yard Cast-Welded Dipper on High-Lift model 2000 Lima.

STRIPPING GOES FASTER when *ESCO* cast-welded dipper buckets do the job. Production records prove it. The reason is simple —

ESCO cast-welded dipper buckets have no "deadhead" weight, carry greater payloads with every pass, make more passes every hour.

Excess Weight Eliminated

Hollow back-beam construction reduces weight while actually increasing strength. Wearing parts are made of wear-resistant manganese steel, need not be made excessively heavy to allow for wear.

Fast Digging Design

Clean cutting front with integral tooth bases and flaring outside teeth give clean, full bite. Tapered box provides quick, complete load discharge.

Long Service Life

Strain is distributed evenly throughout the bucket. *ESCO* Manganese Steel is used for all parts subject to wear and shock. This steel becomes highly polished with use, grows harder and tougher the more it works.

ESCO Buckets Will Make Money for You

ESCO dipper buckets are made in three types—coal loading dippers, cast-welded for general purpose work, and All-Cast manganese steel buckets for extremely severe service. Dragline buckets are available in four types—medium, stripping, standard and heavy duty. Whatever your requirements may be, one of these buckets will do your job quickly, economically and with a minimum of maintenance and "down" time.

Manufactured by

ESCO ELECTRIC STEEL FOUNDRY

DRAGLINE and DIPPER BUCKETS

Distributed by

KANAWHA STEEL & EQUIPMENT CO.

P. O. BOX 2361 CHARLESTON, W VA.

DO YOU KNOW?

With warfarin, a new rat-killing poison, and with other new anti-rodent "ammunition," the U. S. Fish and Wildlife Service believes the nation's annual loss to rats and mice can be cut by at least 75%.

On one dairy farm alone, warfarin killed 1,400 rats in two months, Walter W. Dykstra, rodent control official of the Fish and Wildlife Service, told the National Pest Control Association here.

Warfarin is a slow-acting poison which causes internal hemorrhages in housemice or rats, even if only a very small amount of it is consumed. And animals don't know they've been poisoned after eating warfarin bait; they keep coming back for more until they die.

Other tricks to keep away rodents and bird pests: Stringing charged wires along building ledges and over doorways to create an electrical field which will shock pigeons or starlings. And sending out high-frequency sound waves above the audio limit of the human ear, to scare away both birds and rats and mice. This method, said Mr. Dykstra, has even caused rats to jump overboard from ships.

Unlike paint which hardens when exposed to air a new material by General Electric scientists hardens when away from air. It is a material to stop invisible leaks, to lock a nut on a bolt and to bond materials together.

The new material, for which there are many industrial applications, is a type of "solventless" varnish which G. E. scientists have developed and call "permafils." Ordinary varnish hardens by evaporation. The permafils harden by chemical action. This new one remains a liquid as long as air is passing through it.

When two metal strips are coated lightly with it and clamped together, the joint will support ten pounds after ten minutes or 100 pounds after 20 hours. More rapid hardening will take place if heat is applied. The material can be used to bond other substances besides metals, including even paper and

fabric which can be bonded to themselves or to other materials.

An application suggested is to hold a nut on a bolt without the use of a lock nut. For this purpose, it is put on the threads of the bolt. Similarly, it can be used to make leak-proof pipe joints by application to the threads of the joints.

Radically new paints, lacquers and enamels are predicted for the next decade by Henry F. Payne technical editor of the American Cyanamid Co. and secretary of the American Chemical Society's paint, varnish and plastics division.

Liquid synthetics of low molecular weight will be converted into solid film by an entirely new process which is not yet discovered, he foresees. Chemical synthesis has already produced coatings which will dry faster than natural oils and resins and have greater toughness, resistance and durability.

Automobiles now get finishes of alkyd and melamine resins applied in two or three coats in two or three hours. These are more durable than coatings of earlier automobiles that needed six to eight coats, taking ten days' time.

A vast reserve of montan wax lies right here in this country to be tapped should our imports be cut off again as they were during the last war.

Montan wax is an industrially important ingredient of shoe polish, electrical insulating materials, inks, carbon paper and greases, among other items. Prior to the last war, we imported our supply of this vital wax from Germany.

To take care of our needs in case of another cut-off from this source, the U. S. Bureau of Mines surveyed our lignite deposits from which the wax can be extracted. W. A. Selvig, W. H. Ode, B. C. Parks and H. J. O'Donnell, of the Bureau's Central Experiment Station in Pittsburgh reported that the deposits from certain areas, notably Arkansas and California, give high yields of the wax.

Particularly rich in the wax are lignites that were once finely divided vegetable debris. This debris was long ago washed or blown into swamps or shallow water where the internal cells and the woody tissues rapidly decayed. The more decay-resistant parts now yield the wax.

Here and There in the Coal Industry

• Ralph E. Taggart, President of the Philadelphia Coal & Iron Co., Philadelphia, Pa., since 1935, died May 1. He suffered a heart attack several months before and died in his sleep. Ralph E. Taggart came from a family of mining people and spent all his working days in the mining industry. He was connected with the Stonega Coal & Coke Co. of Virginia before going to Philadelphia. Funeral services were held at Radnor, Pa., interment was at Big Stone Gap, Va.

• Wayne P. Ellis, Central Sales Manager for the Elk River Coal & Lumber Co., of Columbus, Ohio, died at the age of 65.

• The Third Edition of COAL MINING by Donald C. Jones, Professor and Director of Mineral Industries Extension Services and Joseph W. Hunt, Associate Professor and Supervisor of Mining Extension, The Pennsylvania State College has just come off the press.

This edition comes in three volums, covering Basic Technical Information: Examination Preparation: Advanced Mining Study.

The three volumes contain 1254 pages, 458 illustrations, 75 tables.

• The Enos Coal Mining Company today announced the establishment of two annual scholarships covering an entire college course, one at Butler University, Indianapolis, Indiana, the other at Purdue University, Lafayette, Indiana. These scholarships, worth $700 at Butler and $500 at Purdue, are to be known as the George A. Enos Memorial Scholarships in honor of the company's founder, the late George A. Enos.

All boys, including sons of company employees, attending high schools in Knox, Pike, Warrick, Gibson and Daviess counties of southern Indiana are eligible, provided they are in the upper-third of their class scholastically. These particular counties were chosen due to their proximity to the Enos and Enoco Mines, Indiana's leading producers. The scholarship committee of each university will handle all applications and make the annual awards. By 1955 four boys will be attending each of these universities, aided by the new George A. Enos Memorial Scholarships.

• Joseph Purglove, Sr., died at his home in Cleveland, Ohio, on April 24. Joseph Purglove was a pioneer in many new ideas in mining.

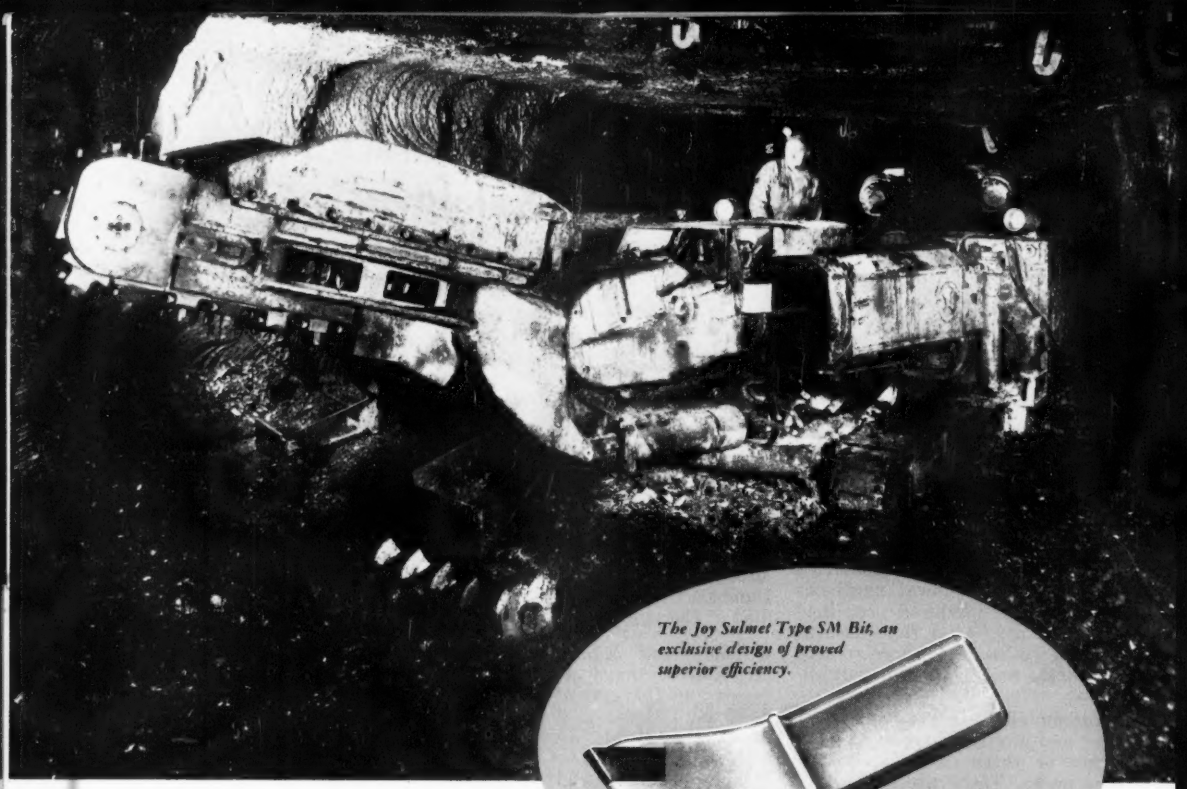
• Mr. M. Albert Evans, supervisor of 22 mines of the Eastern Gas & Fuel Associates in Pennsylvania, West Virginia and Kentucky, resigned his position to take over active duties of his family's coal properties in Pennsylvania. He will make his headquarters at the Pine Township Coal Company, Inc., Heilwood, Pennsylvania.

Mr. M. L. Workman, Division Manager of the Eastern Gas & Fuel Associates, has also resigned to replace his father, Everett C. Workman, as head of the Workman Coal Company, Peytona, West Virginia.

Mr. H. John Harper present assistant to the Vice President has been made general manager of mines. Mr. H. A. Quenon has been made division manager of low volatile mines including Hele, Stotesbury, Eccles, Keystone, Carswell, and Maitland, West Virginia. Mr. W. J. B. Mayo has been made division manager of the Northern mines including Federal No. 1, Grant Town, W. Va., the Melcroft mine at Melcroft and sonman mine at Portage, Pa.

• G. S. Jenkins, Vice-President Consolidated Coal Company, St. Louis, Mo., was elected President of the Illinois Mining Institute at its 58th Annual Meeting held at Springfield, Illinois, November 17. Clayton C. Ball, Chicago, was elected Vice-President. B. E. Schonthal was re-elected secretary-treasurer. New members of the board consist of the following:

William Bolt, Freeman Coal Mining Corp.; F. E. Snarr, Chicago, Wilmington and Franklin Coal Co; Frank L. White, Peabody Coal Co.; Henry C. Woods, Saraha Coal Co.; and Walter Eadie, Director, Department of Mines and Minerals, State of Iillinois. Board members elected were: D. W. Buchanan, Jr., Old Ben Coal Corp.; C. C. Conway, Consolidated Coal Co.: P. S. Pfahler, Superior Coal Co.; H. H. Taylor, Jr., Franklin County Coal Corp.; A. G. Gossard, Union Colliery Co.; H. A. Reid, United Electric Coal Companies, and G. Don Sullivan, Fairview Collieries Corp.



The Joy Sulmet Type SM Bit, an exclusive design of proved superior efficiency.

JOY SULMET BITS

PROVE AGAIN THEY'LL CUT YOUR COSTS

CONDITIONS

Comparative performance of Joy Sulmet Type Sm Bits and two other makes of tungsten carbide bits on a Joy Continuous Miner. Seam about 96" thick—hard firm coal with a 1" or 2" rock parting, normally about 2 ft. from the top. Occasional sulfur intrusions in the coal; in general, fairly hard cutting.

RESULTS

	Joy SM Bits	Bits B	Bits C
Tons mined in test.....	8113	7873	9145
Comparative Bit Cost per ton, including grinding and setting.....	Low	8.8% higher	77.0% higher

The figures above demonstrate once more that Joy Sulmet Bits are best for the Continuous Miner, as well as for cutting machines of all types—a superiority well established in many different mining areas and under widely varying conditions. The exclusive Joy design, with a protective cap over the tungsten carbide insert, results in fewer broken bits and eliminates lost inserts.

Write for Bulletin, or *Consult a Joy Engineer*

W&D CL 9515

JOY MANUFACTURING COMPANY

GENERAL OFFICES: HENRY W. OLIVER BUILDING · PITTSBURGH 22, PA.

IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LIMITED, GALT, ONTARIO

Outside view of coal preparation plant, with hoist building shown at right.

Automatic Coal Hoist

In operation, the latest in coal hoists can be compared to automatic screw machines that process a bar of metal through several operations to turn out a finished product, repeating these operations automatically to make piece after piece until the metal stock is completely processed.

The appearance of such a hoist may be visualized from the following tabulation of a recent installation:

Type—Single compartment, with self-dumping, counter-balanced skip.

Drum—Cylindro-conical, 9 ft. to 16 ft. diameter.

Gear Ratio—9.1 to 1.

Skip Capacity—24000 lb.

Hoist Capacity—700 tons per hour.

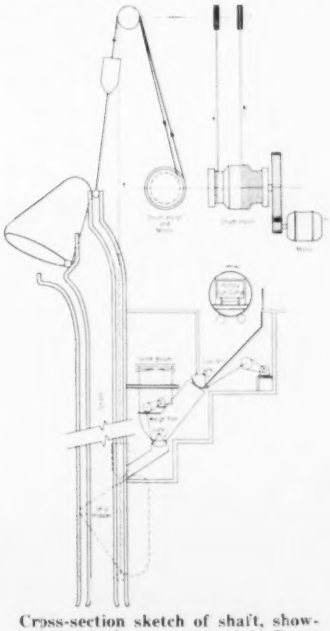
Maximum Rope Speed—2485 fpm.

Drive—1 to 1250 HP, 450-rpm dc motor.

DC Power—Supplied to 1 to 1000-kw, 720 rpm synchronous m-g set.

Automatic control—Rotorol rotating regulator.

In this mine, two seams are worked simultaneously. The loading pockets for the No. 5 seam and for the No. 3 seam are 535 feet and 710 feet, respectively, below the dumping horns. Coal storage facilities are provided at each level and, normally, hoisting is done from these two levels on alternate shifts.



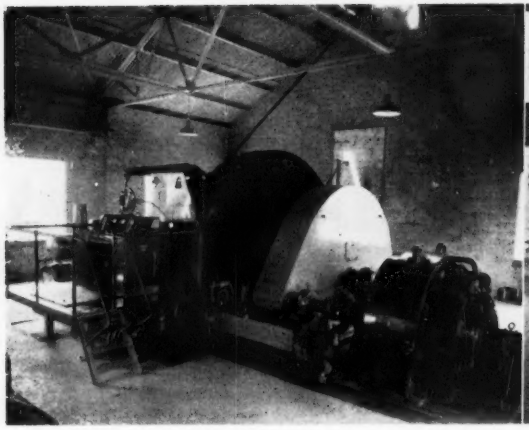
Cross-section sketch of shaft, showing principal components of the Rototrol regulator coal hoist.

The control of this hoist provides for one type of operation for emergency conditions, and for a different type of operation for normal conditions.

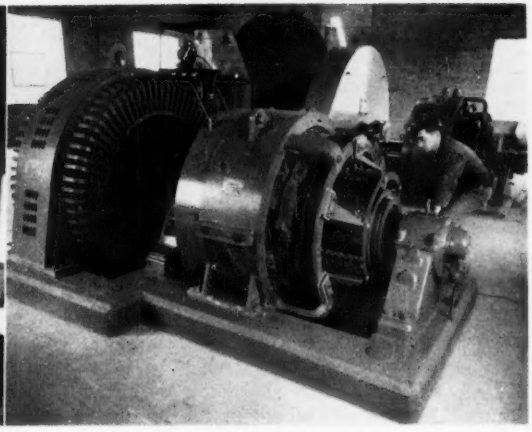
In an emergency, an operator in the pulpit will manipulate a master switch and a brake lever to control the direction of travel and the starting and stopping of the hoist. In appearance this method of operation is similar to that commonly used on almost all hoists previously installed. However, even in emergency operation, there are certain automatic features which are beyond the control of the operator, as will be pointed out later.

It is in normal operation that the working of this hoist suggests the comparison with an automatic screw machine. This best can be shown by a description of actual operating procedure. Assume that the time is at the start of a shift, that the skip is in the dumping horns, and that hoisting is to be done from the No. 3 seam.

The hoist operator (or another properly authorized person) goes to



Hoist drum (stationary), showing operator examining limit switches.



Hoist motor-generator set.

the hoist pulpit and performs five operations:

1. He pushes the buttons to start the main motor-generator set, the main exciter and Rototrol regulator set, and the air compressor (for the hoist brake.)
2. He sets Level Selector Switch on the "No. 3" position.
3. He sets the Manual-Automatic Selector on the "Automatic" position.
4. He moves master switch to the "Off" position, to close the "No-Voltage" relay, then to the full "On" position.
   (It is unimportant whether this is the "Hoist" or the "Lower" full "On" position.)
5. He sets the manual brake lever in the "Release" position.

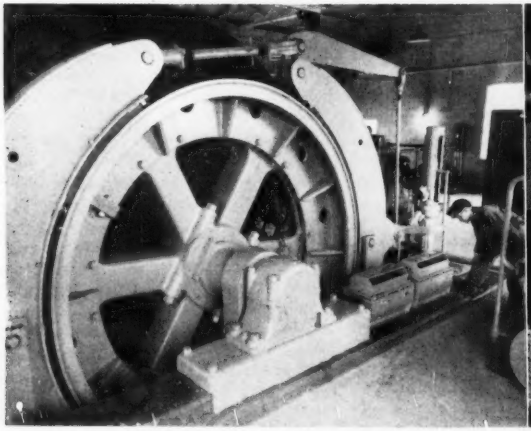
The operator then proceeds to the No. 3 level and pushes two pushbuttons. His duties in connection with the operation of the hoist are thereby completed until it is desired to stop hoisting from the No. 3 seam, or until a power failure, or some other unusual condition arises. The two pushbuttons are "PBG" and "Start." The former controls the operation of the gate from the hopper to the weighing pan, and the latter starts the hoist.

When PBG is depressed, a motor-operated gate is moved to allow coal to flow from a hopper or surge bin on to a weighing pan. Coal will continue to flow until a specified amount is on the weighing pan, at which time the scale beam will operate a limit switch, causing the gate to close. This limit switch also establishes a circuit to permit the weigh pan gate to open when the skip reaches the proper position.

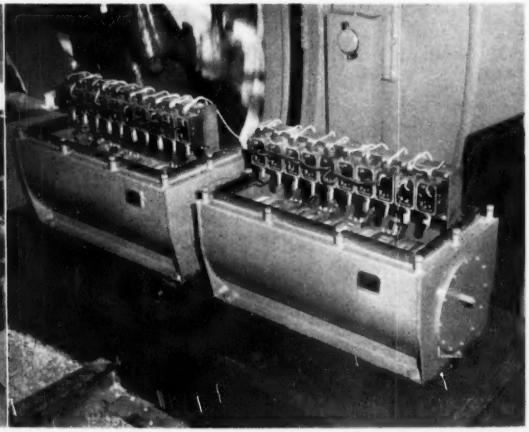
In the meantime, the operation of the "Start" button has initiated a series of actions in the hoist house. First, a directional relay closes to energize the pattern field of the main Rototrol regulator in the "Lower" direction, and to release the hoist brake. From this point on, the operation of the hoist is completely controlled by the Rototrol regulator and by the limit switches, some in the hoisting shaft and others coupled to the hoist drum.

Initially, while the skip is coming out of the dumping horns, the rate of acceleration and the speed of the skip are kept low. When the skip has passed the critical point, a limit switch contact is closed. The Rototrol regulator then builds up the hoist motor current to obtain and maintain a desired rate of acceleration until full motor speed is reached.

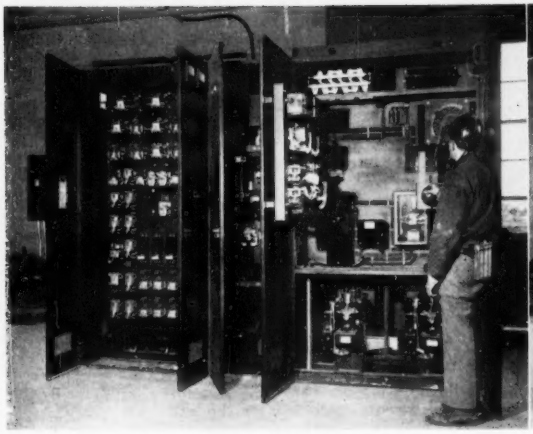
When the skip reaches a certain point in its downward travel, limit switches are operated automatically to act on the Rototrol regulator to



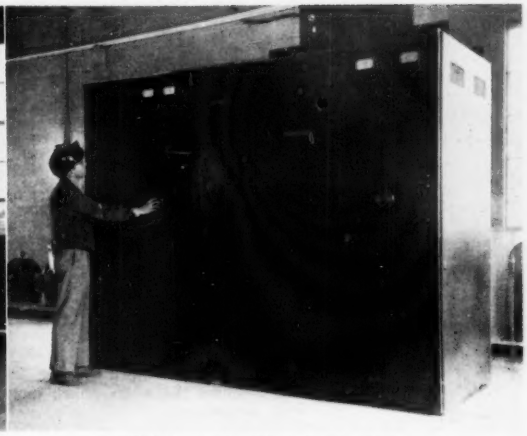
Hoist drum (in motion), showing operator examining limit switches.



Close-up of pulpit limit switches with protective cover removed.



Hoist control cabinet, doors open.



Hoist control cabinet, doors closed.

establish and maintain a desired rate of retardation. Finally, the skip is brought to rest at the position to receive coal from the weighing pan, and the brake is set.

At this point, a limit switch causes the motor-operated weigh pan gate to open to dump the coal from the weighing pan into the skip. This gate remains open a definite length of time, sufficient to permit the weighing pan to empty, after which it closes.

The skip is now loaded and the closing of the weighing pan gate operates a limit switch which causes:

1. The skip to start its upward travel.
2. The hopper gate to open to permit coal again to flow on to the weighing pan.

The upward acceleration of the skip is entirely regulated by the Rototrol control, which establishes and maintains a constant rate of acceleration until full motor speed is obtained. As the skip approaches the dumping horns, limit switches act on the Rototrol regulator fields to set up a constant rate of retardation, to cause the skip to enter the horns at reduced speed and to be pulled through to the overturned, dumping position. The skip remains overturned for a definite length of time, after which a relay acts to initiate the downward movement of the skip.

This cycle is repeated automatically until it is desired to stop hoisting. Of course, if there is no coal in the hopper, hoisting will be interrupted. To stop hoisting, the operator pushes two "Stop" buttons, one for the hoist and one for the hopper gate.

In changing the set-up to operate from a different level, the "Stop" buttons are pushed at the first level, the position of the "Level-Selector" switch is changed, and "PBG" and the hoist "Start" buttons at the new level are pushed to the closed position. The operation of the hoist is the same from both levels, except a lower rate of acceleration hoisting, and lower maximum rope speeds are used from the No. 5 seam.

If there is a failure of ac power, it is necessary for someone to go into the hoist house to restart the motor-generator, the Rototrol exciter set and the air compressor.

If the skip is stopped between the top and bottom landing by a power failure, on return of power the skip will always start in the proper direction to complete its trip.

When it is desired to operate the hoist by manual control, the manual brake is first set, then the master switch is placed in the "Off" position, and the "Manual-Automatic" selector switch is placed in the "Manual" position. The "Level Selector" switch must, of course, be placed in the proper position corresponding to the level from which hoisting is to be done.

In manual operation, the automatic method of weighing the coal and loading the skip are used. The operator can start the hoist from the loading pocket only after the skip is loaded and the weigh pan gate is closed. He can start the hoist from the dumping position only after a time delay to permit the coal to run out of the skip. The operator can stop the hoist at will, and he can reduce the rate of acceleration or the rope speed at will. He cannot increase the rates of acceleration above the values for which the Rototrol regulator is adjusted, nor can he reduce the rate of retardation when approaching the stopping points below the value for which the Rototrol control is adjusted. It is intended that manual operation will be used chiefly for shaft inspection and repair and for rope inspection.

In brief, the hoist equipment is designed to be controlled manually for non-productive inspection and repair operations. It will be controlled automatically for all productive operations, and its functioning will be assured by these features:

1. An automatic skip loading mechanism that provides a load waiting for the arrival of the skip at the loading pocket.
2. An automatic weighing mechanism that assures uniform skip loading, whether the material is coal or rock.
3. Prompt loading of the skip on arrival at the loading pocket, and an immediate start after the skip is loaded.
4. Immediate return of the skip to the loading pocket after the coal is dumped.
5. Interlocking to prevent dumping of the weigh pan except when hopper gate is closed and skip is in position to receive material.
6. Rototrol regulator control of acceleration and speed to assure uniform time cycles of pre-set duration.
7. Rototrol regulator control of retardation to assure smooth, uniform stopping and accurate positioning of the skip at the loading pocket and on the dumping horns.

Front view of the building housing the wash rooms and lamp house.

Back view of the same building. Men leave and enter by the side door on the left.

New Miners' Bath House at the Berwick Mine of the Duquesne Light Company

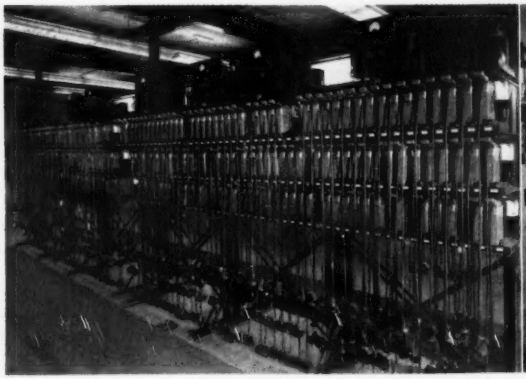
The Warwick Mine of the Duquesne Light Company is located on the Monongahela River in Greene County, Pennsylvania, about 70 miles south of Pittsburgh.

Two seams of coal are being mined on the property, the Pittsburgh seam and the Sewickley seam, employing about 550 miners. The new bath house was built on a hill and has upper and lower floors. The building is 82 feet long and 52 feet wide. It is constructed of concrete footers and has red brick facing. A sizeable automobile parking lot for miners adjoins the upper floor of the building. The lower level parking space is restricted to Mine Foremen.

John Stephenson
Superintendent of the Warwick Mine.

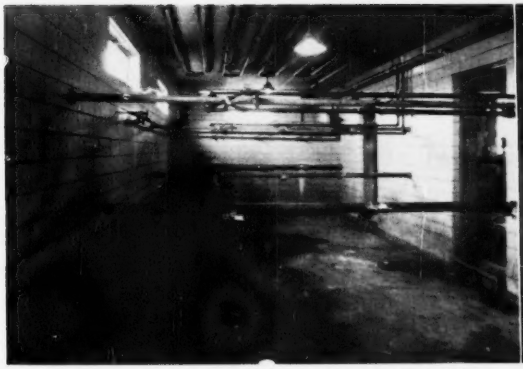
Inside floors are concrete, covered with Mastic coating and are washed after every shift. The miners' dressing room, on the upper floor, is 37 feet wide and 82 feet long. It has 595 clothes baskets. This room also has a large circulating air heater in the middle and up near the ceiling so that air is sure to circulate through the miners' clothing to keep it dry. This room also contains a 2500 gallon hot water storage tank.

After the miners have changed to work clothing, they go down stairs for their lamp. The downstairs also houses the boiler room with a 500 gallons per hour water heating capacity tank, the mine



Over-all view of a rack of the new M-S-A Edison Model R-4 electric cap lamps.

A rack of safety lamps, located next to the electric cap lamps.



Shower room located on the upper floor of the building.

Outer wall of the shower rooms. Note Pedasprays at each entrance

Over-all view of the basket type clothes lockers. Note the circulating ventilator and heater located in the ceiling.

foremen's office, foremen's locker room and the foremen's shower and commode rooms. Leaving the lamp room the miners pass onto a walkway that leads to the mantrips.

A complete line of carbide tipped mining tools for cutting and drilling coal has been issued by Kennametal, Inc., Latrobe, Pa. The catalog is beautifully illustrated and is complete with job performance data. Twelve new mining tools are shown. The most important of these are two rock bits for stoper-type drilling roof bolt holes, a three-point rock bit for stoper-type drilling roof bolt holes, and two different styles of rods that can be put into standard coal drills and equip them for service in roof bolting. Other new tools include an improved "hitch bit" for drilling hitch holes, a bit set with Kennametal Mining Machine Bits which is especially designed for boring hard rock, and a fixture is offered that is used to mount grinders for reconditioning mining machine bits. The integrated research, engineering, manufacturing and service facilities of the company are also detailed.

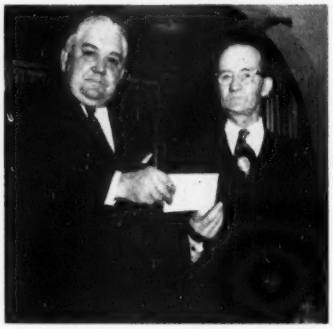
With some 30 tools offered in up to 400 sizes, the Kennametal line is considered by the manufacturer to be the most complete in the industry. Write Kennametal Inc., Latrobe, Pa. for your free copy.

Greensburg-Connellsville Coal & Coke Company Gives Farewell Party to Retiring General Superintendent

Mr. John S. Palin, until recently General Superintendent of the Francis and Carpentertown mines of the Greensburg-Connellsville Coal & Coke Company was given a farewell party upon his retirement from duties. The party took place at the VFW hall in Burgettstown, Penna.

In attendance were all operating officials and some office help at both the mines under his supervision.

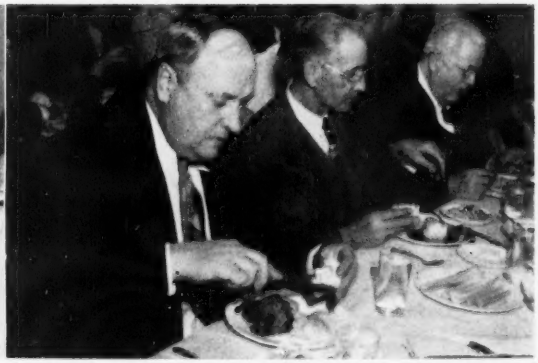
John S. Palin started working around coal mines at the age of 15 when he took a job as laborer at the Vulcan mine of the Pittsburgh Coal Company at Treveskyn, Allegheny County, Penna., in the year 1902. He worked on that job six months then went to the National Mining Company at Sygan, Penna., as bit carrier, mule driver, locomotive operator and check weighman in the eight years he was there. He then went to work for the Pittsburgh Westmoreland Coal Company at Van Voorhees near Charleroi, Penna., as check weighman where he stayed three years. His next job was fire boss at the Hazelkirk mine of that same company in the same vicinity where he stayed one year. From that job he went to Wehrun, Indiana County, Penna., as fire boss and assistant foreman under Frank Dunbar and stayed there two years. From there he went, as mine forman, to the Potter Coal & Coke Company at Coral, Penna., where he stayed one and one-half years. He then went to work for the Langloth Coal Company as mine foreman of the Langloth mine at Langloth, Penna., where he stayed three years. He worked for the State Rating & Inspection Bureau in the Connellsville district for another 1 and one-half years. The Corrado Coal Company at Confluence, Penna., offered him a job as superintendent and he took that for another one and one-half years. From Confluence he went to the Mather Collieries at Mather, Penna., as assistant superintendent under J. H. Evans. He left there to go to work for the Greensburg-Connellsville Coal & Coke Company as superintendent of the Francis mine then general superintendent of the Francis and Carpentertown mines.



J. D. Whalen, presenting a farewell gift to John S. Palin, the retiring general superintendent.

C. C. Cornelius, present general superintendent, addressing the group in attendance.

Speakers table, left to right: E. A. McConeughy, mine foreman, Francis Mine; J. D. Whalen, Superintendent, Francis Mine; John S. Palin, retiring General Superintendent, C. C. Cornelius, present General Superintendent, Francis and Carpentertown mines and James H. Jones, Chief Clerk, Francis Mine.



Wm. Morris, Safety Director for the Greensburg Connellsville Coal Co.; J. J. Mertha, Assistant Superintendent, Carpentertown Mine and L. O. Lougee, Chief Engineer for the Baton Coal Co.

The coke breeze is gathered on the pile by scraper type carry-alls and hauled to the separation plant.

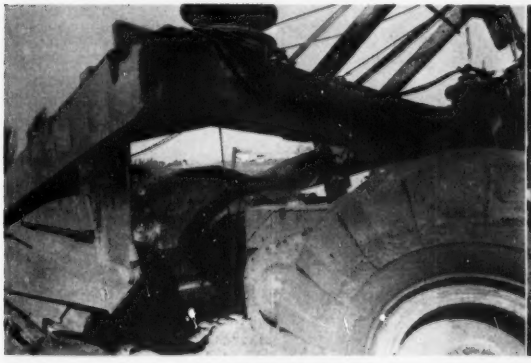
Recovering Valuable Coke Breeze From Abandoned Coke Oven Refuse Piles

The demand for fuels of all kinds is again becoming urgent and every known means of supplying the demand will have to be employed.

In the last war emergency many tons of valuable B.T.U.'s were obtained from abandoned refuse piles, left by bee-hive coke ovens in metallurgical coal areas.

A number of coke breeze recovery plants were operated in the last war. One such plant which produced many thousands of tons of coke breeze was operated near Uniontown, Pennsylvania. At this operation three Woldridge Terra Cobra Scrapers were used to load and haul raw material from the refuse piles to a bin at the washing plant. A conveyor belt elevated the raw feed to a revolving screen which removed the larger impurities, mostly fire brick, and dumped them into a refuse bin. This refuse is hauled back to the dump area from which the raw material is obtained by the scrapers on their return for another load.

The finer sizes, made by the revolving screen, are passed into jigs where the coke breeze is separated from the finer impurities. The finer impurities are passed to the refuse bin with the larger impurities and the cleaned coke breeze goes into a separate bin from which it is trucked to railroad cars that haul it to market.



The scraper carry-all dumping its load into hopper for feeding to the separation plant.

On its way back to the pile, the scraper carry-all takes a load of refuse for dumping on the way.

Syd Gane, S. E. Gane & Company, giving brief outline of Cadwelding before introducing the speaker on that subject.

Don Burke, design engineer and Al. Siebert, public relations manager of ERICO Products, Inc.

Cadweld Process of Welding Discussed at Carmicheals, Pa. Meeting of the Mining Electro-Mechanical Maintenance Association

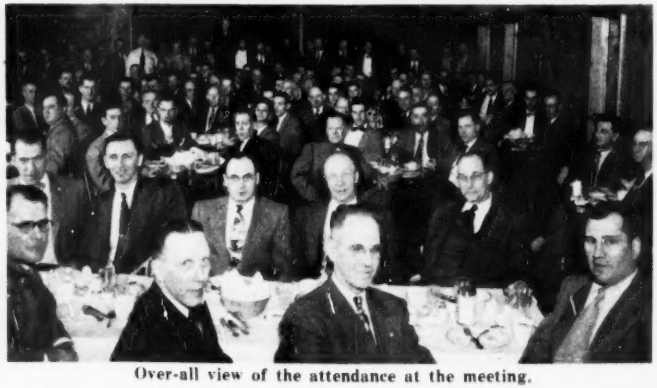
The CADWELD PROCESS is a method of welding copper to copper or copper to steel in which no outside source of heat is required. Developed by ERICO PRODUCTS, INC., Cleveland, O., the process is a controlled reduction of copper oxide by aluminum which produces molten copper and aluminum oxide slag. Over the past 10 years the CADWELD PROCESS has become one of the outstanding methods for welding signal bonds to rails. In the last three years, the process has been widely accepted as an excellent method of making cable connections

Close-up of Cadwelded bond to rail.

of all sizes from No. 14 through 2000 MCM. It is also applicable when connecting cable to a flat or curved copper or steel surface, in both horizontal and vertical planes. Another vast field rapidly switching to Cadweld is the connection of lugs to cable. A 1 16″ x 1 2″ lug to No. 6 stranded cable and 3 4″ x 3″ lug to 2000 MCM stranded cable are two examples of the versatility of the CADWELD PROCESS. Rectangular buss 1 8″ x 1″ to 1 2″ x 5″ and tubular buss 1 2″ IPS to 2″ IPS are now standard Cadweld connections.

John T. Flaherty, Field Engineer for Metallizing Engineering Co. on left and H. T. Lang, President, Industrial Electric Co., Washington, Pa., showing gears that have been rebuilt by Metallizing.

Showing internal combustion engine cylinders after and before rebuilding with Metallizing.



Over-all view of the attendance at the meeting.

Left to right: Geo. Byers, Chief Electrical, D. Dowlin, Chief Engineer, G. Copeland, Assistant Engineer and J. O'Brien, Preparation Engineer, all of the Nemacolin Mine, Buckeye Coal Co.

Left to right: Bob Boyd, Herb Dunbar, President Superior Mine Supply Co., Don Dowling, Supply Clerk, Crucible Fuel Co. and Richard Quick. Bob Boyd and Richard Quick are demonstrating Cocoon, a plastic material for stopping spalling and ceiling of stoppings

The equipment necessary for Cadwelding is a combination crucible mold machined out of graphite. The mold is mounted in a frame and handle clamp assembly. The powder which is packed in cartridges can be shipped first class, cannot ignite spontaneously and can be stored without danger. An outstanding feature of Cadweld is that the equipment is portable.

The procedure for welding is as follows: The conductors are placed in the mold cavity and the welder is clamped shut. A steel disk is dropped into the crucible covering the tap hole. The cartridge containing the powder is then dumped into the crucible. In the bottom of each cartridge is a small amount of starting powder that, when ignited by a flint gun, sets off the reaction. The molten copper melts the steel disk and runs over the conductor ends, welding them together. A small deposit of aluminum oxide slag remains in the crucible of the welder and is easily removed before making the next weld.

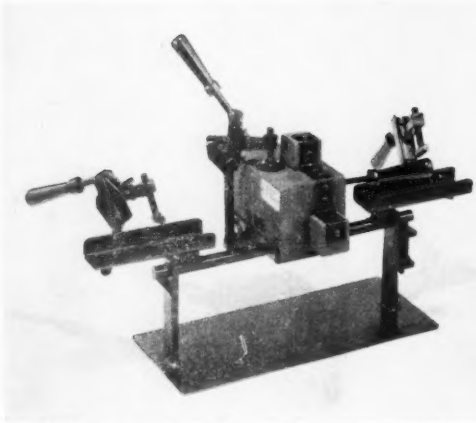
Harry S. Collins, Metallizing Engineering Co., outlining the many uses for metallizing.

According to laboratory tests, the physical properties of Cadweld connections are excellent. Conductors welded by Cadweld have a tensile strength equal to that of soft drawn copper. The reaction produces 98% pure copper and, by the designed increase in cross sectional area, the current carrying capacity is equal to or greater than that of the original conductor. A Cadweld connection is not subject to gradual loosening or oxidation.

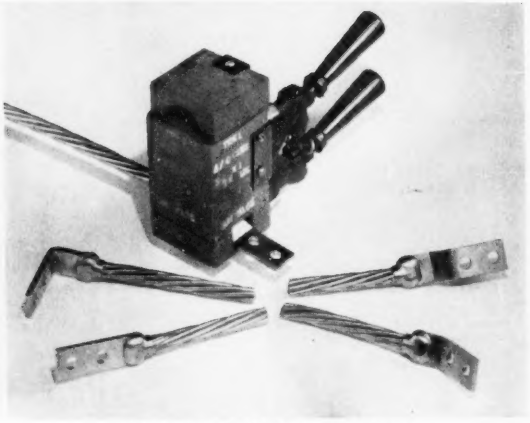
Where flexing is a factor,

Left to right: Adolph Richtarsky, Roaald Roberts, Mike Wasko, Stanley Rygle, Dale Miller, Milton Sprague, all repairmen at the Crucible Fuel Co.

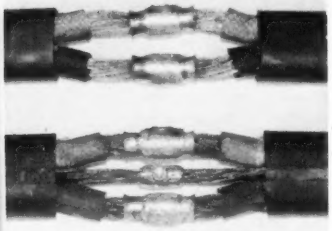
Left to right: John J. Boskorvich, Jr., Stanley Boskorvich, John J. Boskorvich, Sr., James M. Brown, all repairmen at the Robina Mine of the U. S. Steel Corp.



Welder for parallel mine machine cable splice. 2 or 3 conductor type G or W.



Typical Cadweld lug connections.



Cadweld parallel mine machine cable splices

sleeves are furnished to strengthen the cable at the weld. The Cadweld connection is equal in tensile to the strength of a casting of the same cross sectional area.

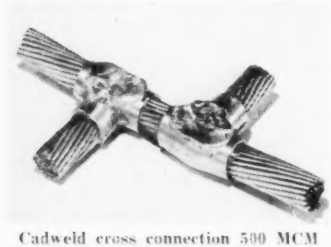
The time required to make connections on small conductors is a fraction of that used in acetylene welding or brazing. After preparing the cable, merely removing the insulation, it takes no longer to splice 2000 MCM cable than it does to splice No. 14. In all cases heat damage to the insulation is at a minimum compared with slower methods, as the speed with which the weld is made results in less total heat applied. Large conductors can be wrapped with a damp rag—this cools the outer strands and dissipates the heat through the inner strands.

Another special feature in addition to the savings in cost and time is that no special skill is required—the process can be mastered in ten minutes.

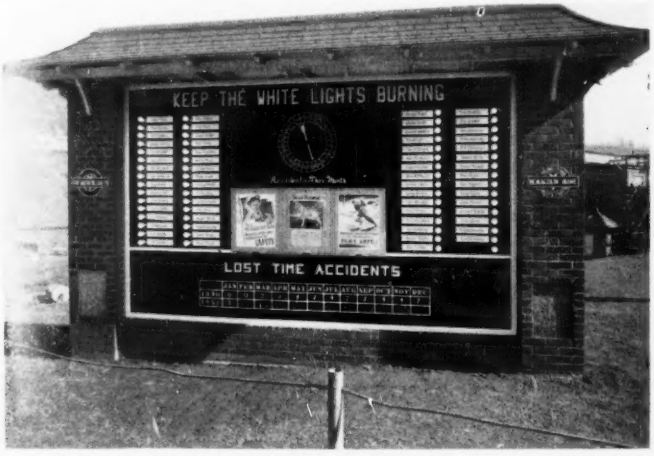
In recent months, great strides have been made in splicing mine machine cable. A once long, hard job is now made easy and permanent with the Cadweld Process.

The CADWELD PROCESS is a superior method of welding electrical conductors. The electrical industry, mines, railroads, U. S. Army and Navy are all users of the process. Over 17,000,000 signal bonds are on U. S. railroads today. Over 100,000,000 electrical connections have been made to date. Cadweld is a permanent connection having low resistance and top current carrying capacity. It cannot be overloaded.

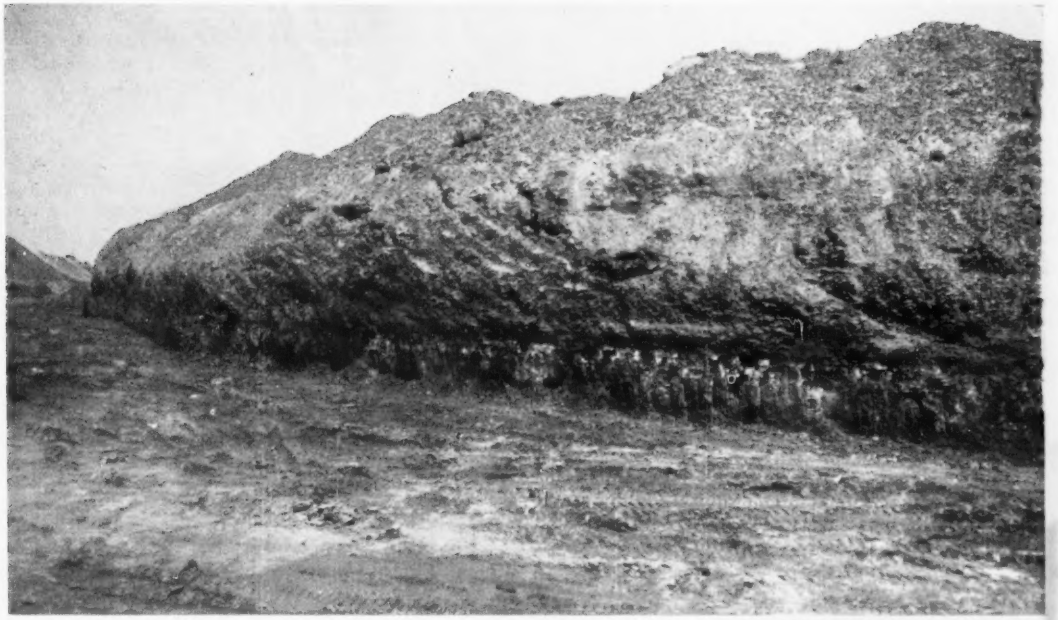
The other subject discussed at this meeting was about the value of Metallizing and was sponsored by the Industrial Electric Co. of Washington, Pa., and the Metallizing Engineering Co. of New York. Examples of rebuilt gears and burned cylinders of internal combustion engines were shown. Mr. Harry S. Collins from the home office of the Metallizing Engineering Co. gave a very comprehensive outline of the other uses for metallizing.



Cadweld cross connection 500 MCM and larger cable made with two T connections.



New Safety Board at the Nemacolin, Pa., mine of the Youngstown Sheet & Tube Co.



Typical Highwall at the operation of the Chutz Brothers, near Slippery Rock, Pa.

Stripping Operation of the Chutz Brothers

The inception and development of the coal stripping business of the Chutz Brothers presents another one of those rapid business successes that happen only in these good United States of America. Here are three brothers who were working their mothers farm just West of New Castle, Pennsylvania when World War II started. The great demand for coal permitted them to go into the coal trucking business and they worked that business up to five trucks before the Army got John and the Navy got Don. Mac, who has a broken ear drum, had to stay home to look after his mother and take care of the trucking business. After the war ended the boys decided to sell their trucks, put the money received for the trucks into a used Model 75 Lorain shovel and go into the coal stripping business. They

Left to right: Mac Chutz, general manager and John Chutz, Supt.

These two Caterpillar D-8 tractors do most of the stripping.

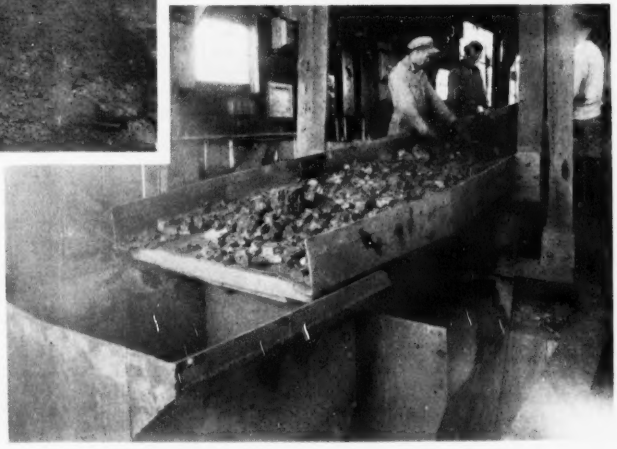
Huber maintainer, equipped with broom, is used to clean the surface of stripped coal.

The Lorain Model 820 shovel loads out coal on day shift and strips overburden on night shift.

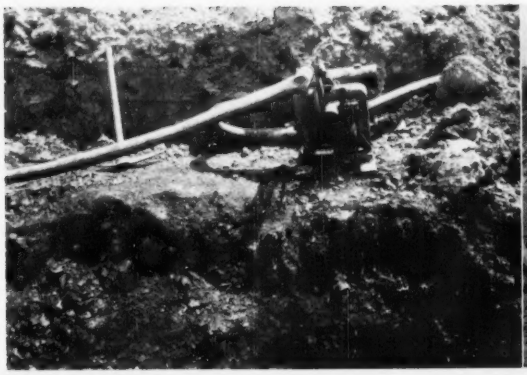
This Unity shovel is used principally for loading out the coal.

Right: Preparation plant located on the P. & L. E. Railroad at Forestville, 7 miles from the pit

Left: Modern haulage trucks are used to haul the coal to the preparation plant.



Right: Inside the preparation plant is a 4-man hand picking table. In the foreground is the Scottdale double roll crusher.



Left: Is a 3-inch Gorman-Rupp gasoline pump and above is a 3-inch Jeager gasoline pump used for dewatering the pits.

leased a pocket of what they believed to be a stray seam of coal lying west of New Castle and six months later had all that coal removed. They moved their equipment up to Clarion, Pennsylvania, where they operated four years in tough overburden and added considerably to their list of stripping machinery.

At present the Chutz Brothers are stripping a 20 acre tract of the Middle Kittanning seam of coal about 3 miles west of Slippery Rock, Pennsylvania. The coal runs from 36 to 38 inches in thickness. Overburden consists of loam, clay, yellow and dark brown shale that does not have to be shot. Up to 35 feet of overburden is moved, mostly with two Caterpillar D-8 tractors. A Model 820 Lorain shovel with 32 foot boom, 28 foot stick and 1¾ cubic yard bucket is used for stripping on the night shift and for loading coal on the day shift. A Huber Maintainer is used to clean the surface of the stripped coal. Other loading is done with a Model 1020 Unit shovel with a ¾ cubic yard bucket. Eleven trucks are used to haul the output to a preparation plant on the Pittsburgh and Lake Erie Railroad tracks at Forrestville, a distance of 7 miles.

At the preparation plant the coal is dumped into a bin which holds 30 tons of raw coal. The coal is then fed, by reciprocating feeder, onto a 16 foot long 42 inch wide screen picking table where the larger sizes are hand picked. At the end of the picking table is a 24 inch Scottdale double roll crusher for making fine sizes to meet market demands. The present big market is lake coal. Other markets are industry and domestic trade.

Fig. 1—Central figure in the new MinePhone communication system at Dominion Coal Company's No. 20 Colliery at Glace Bay, Nova Scotia, is the dispatcher. The new M.S.A. system gives him continual contact with all locomotive operators.

Fig. 2—Electric locomotive operators in Dominion Coal Company's Colliery at Glace Bay, Nova Scotia, talk with the dispatcher and other operators while hauling coal cars in or out of the mine. M.S.A. MinePhone transmitter and receiver unit lays flat on top of the locomotive. Operator Joe McKinnon is holding the microphone.

MinePhones Boost Coal Mine Efficiency

The modernization program of Dominion Steel and Coal Corporation, Ltd., has included introduction of a mobile communication system in its Dominion Coal Company, Ltd., No. 20 Colliery at Glace Bay, Nova Scotia. This system, believed to be the first of its kind in Canada, enables the dispatcher and motorman on moving locomotives to be in constant contact with each other on a two-mile electric motor road in the mine while hauling coal.

The system consists of identical "MinePhone" units that add greatly to the efficiency of coal movements in the mine and to the safety of mine operations, according to a company spokesman. No longer are motormen in doubt about the location of other trains in the mine. They, as well as the dispatcher, are constantly aware of all train movements that affect their own movements. Such traffic control contrasts sharply with the limitations of occasional contacts with the dispatcher through isolated telephone stations.

Motorman on all-electric locomotives on which this equipment is installed have available not only instant voice communication with the dispatcher but also with the loud speaker on each locomotive. All have an "open party line" with the dispatcher and motormen on other moving trains. The new communication system assures high operating efficiency and economy by preventing congestion on the main line and by maintaining a continuous flow of coal from the mine. One of the reasons for this is that it is no longer necessary to stop trips to make telephone calls or to delay trips until the dispatcher hears from a motorman. In cases of emergency it is no longer necessary for the dispatcher to make consecutive telephone calls to several points.

Instant communication also minimizes breakdowns and the effects of breakdowns on coal movements in the mine. Emergency conditions can sometimes be corrected before their effects become as serious as they otherwise would without immediate reports. Another safety consideration is the fact that hopping on and off of locomotives while still in motion to reach trackside telephone is eliminated.

The ability to control transportation by a system that permits more exact knowledge of movements and instant decisions in dispatching without fear of errors, congestion, or collisions, is a great improvement in many ways. For example, even if an error were made by the dispatcher, the fact that his order is heard by all motormen would prompt the motorman whose trip would be adversely affected to cut in and report the conditions that introduce a hazard. Colliery employees have reported several occasions when the MinePhones have proved their value and provided a higher safety factor.

The MinePhone, manufactured by Union Switch & Signal Company and sold by Mine Safety Appliances Company, Pittsburgh, utilizes circuits based on the well-known inductive train communication system. However, it employs the frequency modulated (FM) carrier wave of 88 kilocycles with modulation within a range of plus and minus 3 kilocycles. Voice currents are carried by the 250-volt trolley line from which the locomotives draw their power.

The system operates on 250 volts obtained from the line through a resistor. It is grounded through the rails. Special "squelch" filters prevent noises from commutator motors, trolley arm contact, and other sources.

Each MinePhone unit consists of a transmitter and receiver unit with hand microphone and loud speaker. Before talking, it is only necessary to pick up the microphone and press a button in the handle. The loud speaker makes use of a variable volume control so that is can be heard under all conditions but cannot be turned off except by lowering the trolley pole. This assures the motormen of hearing every order from the dispatcher.

The MinePhones on locomotives are wired in such a way as to be disconnected whenever locomotives operate beyond the end of the trolley line. This makes explosion-proof equipment unnecessary. Additional safety is provided by isolating the microphone circuit completely from the power circuit and

providing an inter-connected ground on each unit.

MinePhones are built to withstand considerable abuse. Units can be mounted in almost any position. Maintenance of MinePhones has proved to be negligible compared with the telephone and requires but little knowledge of electrical circuits. Easy accessibility of components simplifies their removal for service and substitution of standby units.

Transmitting and receiving trays are mounted separately in a shock-resistant cradle within a waterproof box. These trays are held in the case by four studs each of which can be tightened or loosened by a quarter turn. A multiple circuit connector plug is pulled to release the complete transmitter or receiver unit. Loudspeaker and microphone can be mounted wherever convenient for the motorman. Since no power-generating equipment is required, the complete equipment is small in size and light in weight. Standard radio tubes are used.

To summarize, the MinePhone has greatly improved transportation efficiency at No. 20 Colliery because the location of all locomotives is always known by all concerned. This not only speeds the movement of coal out of the mine but promotes safety for both men and equipment.

• Coal mining machinery now can be completely, quickly and safely degreased and cleaned at any point in a mine where electricity and water are available, with the new MSA All-Electric Steam Cleaner just announced by Mine Safety Appliances Company.

Many major time and labor-saving advantages are reported for the new equipment, which has been approved by the U. S. Bureau of Mines.

Machines to be cleaned no longer need be moved from the operating location, or taken to the surface, an operation which often requires dismantling, lost production time for the machines, and a tie-up of main entries and shafts.

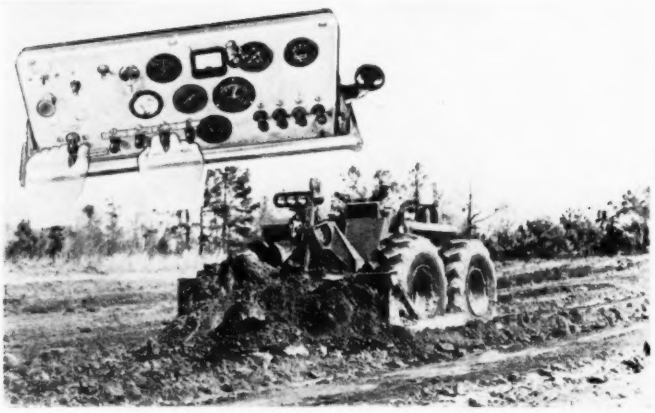
Cleaning can be done with labor available at the mine. This is stated to be particularly important when machinery is to be overhauled. It is said that as much as 40 percent of a mechanic's time may be spent cleaning a machine before repairs can be started.

Use of combustible and toxic cleaning agents is eliminated. MSA Cleaning Compound, a non-inflammable powdered cleaner, has been developed for use in a heated water solution.

Grease and dirt are cut, dissolved and driven from machinery with a blast of the steam solution which has passed through an electrically heated manifold in the cleaning mechanism.

Further information on the new All-Electric Steam Cleaner is available in Bulletin AP-1 which may be obtained without charge from Mine Safety Appliances Company, Braddock, Thomas and Meade Streets, Pittsburgh 8, Pa.

A. W. Neille of Tri-County Fuel, Youngstown, Ohio; Layton S. DeLauter, President of DeLauter Coal Co., N. Lima, Ohio; and G. W. Vickroy of Carbon Coal Co., Grove City, Pa., study "Caterpillar" No. 12 Motor-Grader as L. E. Samuelson, General Parts & Service Manager of Beckwith Machinery Company at Pittsburgh, Pa., points out versatility of blade positions.



LeTourneau's Super C Tournadozer, which incorporates torque converter, electrically-controlled gear shifting and steering. (Inset) Closeup of Tournadozer instrument panel. In this position, operator's right hand operates push-pull gear shift switches . . . his left hand operates toggle switch which controls steering.

● R. G. LeTourneau, Inc., Peoria, Illinois, manufacturer of heavy earthmoving equipment, is now building the Super C Tournadozer available with torque converter and electric control.

The torque converter is a single-stage type, which acts as an automatic hydraulic transmission, combining the advantages of a hydraulic coupling. It transmits and selects the proper ratio for delivering power in a steady, even flow to the wheels and provides a shock load cushion between the engine and the drive wheels which allows the engine to operate at maximum r.p.m. Lugging of the engine is eliminated. This provides maximum torque when needed (particularly when starting), and permits smooth acceleration to all speed ranges which cuts down tire slippage and wear. This single stage torque converter was selected because it delivers its greatest operating efficiency in a range closely matched to the speed ratios of the Automatic constant mesh transmission now used on current equipment.

H. Clay Stickel of the Dunlo Coal Co., Windber, Pa., listens while H. A. Cameron, General Sales Manager of Beckwith Machinery Company, Pittsburgh, Pa., expounds on the "Caterpillar" D337 Engine producing 275 H.P. at 2000 RPM and which powers the CAT DW21 wheel-type tractor. M. E. Fearis of Caterpillar's Sales Development staff is at the right.

● J. L. McDermott has been named district sales representative for Marion Power Shovel Company in eastern Missouri and southwestern Illinois. He will make his headquarters in the firm's St. Louis district office at 411 North 7th St., Suite 713.

Since World War II, Mr. McDermott has been active in industrial sales work in Missouri and surrounding states. Prior to service with the U. S. Marines in the Pacific during the war, he was a member of the Chicago Livestock Exchange.

● The Euclid Road Machinery Company has just published two new 16-page booklets covering Cummins and General Motors powered Euclid equipment. These list by model number the various diesel engines and the Euclid equipment in which they are available. Specifications for Euclid Rear-Dump and Bottom-Dump haul ng units Scrapers and Loaders are included, as are lists of engine dealers and Euclid distributors in the United States and Canada.

Copies of form EGM-1 covering General Motors and ECE-10 on Cummins powered Euclids are available from dealers, main offices of the engine manufacturers, and from Euclid.

● The Pittsburgh Consolidation Coal Company, Pittsburgh, Pa., is among 238 firms throughout the United States and Canada which are being awarded "Certificates of Management Excellence" for the year 1950 by the American Institute of Management, New York, according to Jackson Martindell, president of that non-profit foundation. The awards, which will be bestowed annually hereafter by the Institute, are based on its continuing study of more than 2,000 leading concerns—designed to provide a base for research into corporate policies and procedures.

In weighing the merits of each management, Mr. Martindell explained, credits are given for excellence in ten separate fields—economic function, corporate structure, health of earnings growth, fairness to stockholders, research and development, directorate analysis, fiscal policies, production efficiency, sales vigor and executive evaluation.

• Herbert L. Reichelderfer was recently appointed Assistant Sales Manager in the Wilkes-Barre office of Cleveland Brothers Equip. Company, of which Fred Greenley is Manager. Mr. Reichelderfer, a graduate of Penn State College, was associated with Rutgers University as supervisor in the Engineering Science and Management War Training Program, (ESMWT) during the early part of World War II. He then became assistant training director and later district representative in Eastern Pennsylvania for John A. Roebling's Sons Co.

Herbert L. Reichelderfer

Cleveland Brothers are distributors for "Caterpillar," Hyster, Athey, Trackson, Martin Trailer, Marlow Pump and B & B Wire Rope, with Sales and Service Centers in Wilkes-Barre, Frackville and Harrisburg, Pa.

• Mobile mine-type compressors are the subject of a new bulletin announced by Joy Manufacturing Company, Henry W. Oliver Building, Pittsburgh 22, Pa. The 29 sizes and models of their two-stage, air-cooled, MINE-AIR compressors are fully described. These include track-mounted or rubber-tire mounted tow-bar type or self-propelled type, and base-mounted units for mine mounting. The 24-page bulletin utilizes photographs, line drawings, and specification tables to describe these portable air-plants. Bulletin A-53.

• Fracture table, for use in moving an injured person from the scene of the accident, is equipped to hold the entire body motionless and to supply traction on any broken bone, including the spine. Made of duralumin, it allows patients to be x-rayed without removal from the table. Manufactured by V. Bishop & Co., Platinum Works Malvern, Pa.

PROSPECTING DELUXE—Mining engineers will use this Willys jeep and its built-in drill while searching for deposits of tin, lead, zinc and coal in the trackless jungles of Thailand. The Jeep's 4-wheel drive will enable the engineers to get through the jungle and its engine will supply power to operate the drill. The rig is part of $500,000 worth of equipment which the ECA is providing this year to aid the Thai government in modernizing its mining industry and to help it relieve a critical fuel shortage. ECA officers Edward Herman and Samuel Bitting are shown with members of the Thai Embassy.

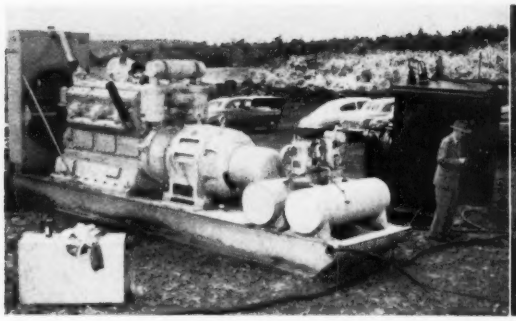
• Link-Belt Company announces that Mr. Harry G. Andersen, heretofore district sales engineer at Milwaukee, Wis., has been appointed district manager at Birmingham, Ala., with headquarters in the Comer Building, 2100 Second Avenue N.

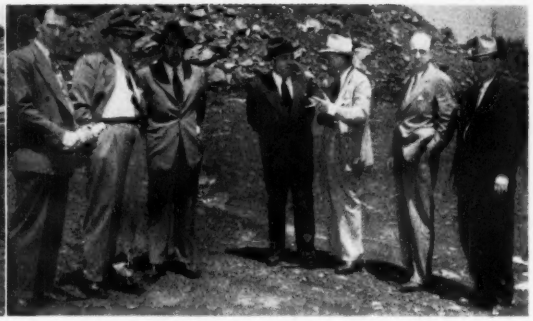
H. G. Andersen

Mr. Andersen was educated at Northwestern University, Illinois Institute of Technology, and Wisconsin University. He started his Link-Belt career in 1937 at the company's Pershing Road plant in Chicago, where he served in various capacities in the engineering department and Chicago District sales. He was transferred to Milwaukee in 1948.

Mr. Andersen succeeds Mr. J. T. Bell, Jr., who has been called back into the service of the U. S. Army, Corps of Engineers.

• The Joy Manufacturing Company, Henry W. Oliver Building, Pittsburgh 22, Pa., announces a new bulletin illustrating their complete line of Sulmet tungsten-carbide bits. The 12-page bulletin decribes the 11 types of cutter bits, the 8 styles of auger drill bits, and the 4 sizes of finger bits available. Also included is a new type of bit for drilling long blast-holes with high-speed rotary drills. A complete line of auger-drill steel and couplings is also displayed. Bulletin C-42.





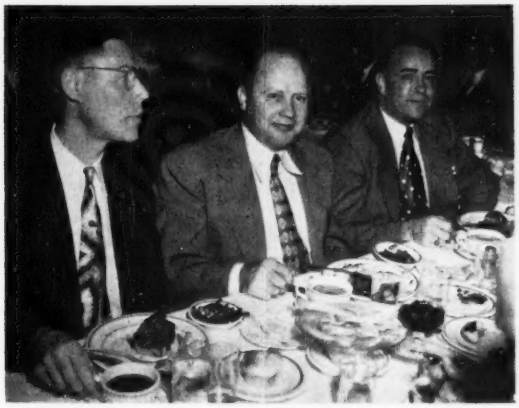
Pictured at left: The Caterpillar D-397 Engine Generator before it has been installed. Pictured at right, left to right: George Krosse, Link-Belt Speeder Co.; George Scott, Cleveland Brothers Equipment Co.; Fred and Palmer Correale of the Correale Construction Co.; Bob and Roy Cleveland and Fred Greenley of the Cleveland Brothers Equipment Co.

Shovel in which the new Catepillar D-397 Engine Generator was installed.

• Catalog No. 835 by Jeffrey Mfg. Co., Columbus, Ohio, describes complete line of mounted coal cutters for operation on or off track. Types shown are the Jeffrey 70 UR for off track mining, the type 29 U for track operation, the 29 UC for off track mining, Types 29 L and 29 LC arcwall coal cutter for track or off track operation and Jeffrey boom type drills for mounting on cutters.

• Models 80FD and 82FD Rear-Dump Euclids of 15-ton capacity are described in a new eight-page catalog just released to distributors of The Euclid Road Machinery Co. This new bulletin describes the various features of the off-highway hauling units designed and built for moving earth, rock, ore and other heavy excavation. Powered by Cummins 165 h. p. or General Motors 190 h. p. diesel engines, top speed of this unit with 30,000 lb. payload is 21.5 or 26.4 m. p. h.

The catalog is availab e from the main office of Euclid at Cleveland 17, Ohio or from the local Euclid distributor.



Left to right: W. A. MacCalla, West Penn Power Co.; Morgan Williams, Gen. Supt., Oglebay Norton & Co. and Keith Pfoor, Mine Safety Appliances Company.

• Easy, thorough cleaning of mine shower rooms, even where ordinary cleaners and hard rubbing have failed, has been made possible by "Bull Frog" Saf-T-Klenz, a powder developed especially for this purpose.

Saf-T-Klenz removes soap oil, body grease, algae formation, lime deposits and rust stains, makes floors practically slip-proof and minimizes conditions that breed and spread infectious germs. It is only necessary to sprinkle on a damp surface, moy lightly, and flush with clear water.

Harmless to hands, clothing, floor and drains, Saf-T-Klenz is also odorless.

A free liberal sample, literature and prices will be sent to anyone addressing Berman Chemical Company, 706 Superior St., Toledo 4, Ohio.

• The relatively little known but increasingly important metal called germanium has been experimentally recovered from deposits in smoke stacks in England by the research laboratories of General Electric Company. Its growing importance is due to its use in electronics.

It has been known for 20 years that some of the coal found in this country contains germanium. When coal is burned in industrial plants some two-thirds of the germanium in it is expelled as a germanium sulfide or oxide. These compounds form a deposit in the flues. It is from these deposits that the germanium is recovered.

Flue dusts from gas works may contain from 0.5% to 1% germanium. In the recovery process the compounds in which it exists are converted to germanium tetrachloride by treatment with hydrochloric acid. By further chemical processes, the tetrachloride is purified and the germanium obtained. Processes have now been developed which produce an economical yield. Supplies of high-purity germanium metal and germanium oxide are now available in England without imports.

• The Euclid Road Machinery Company has just published a 16-page catalog folder covering Models 31TD and 53TD Rear-Dump Euclids of 44,000 lb. payload capacity. Well illustrated, this catalog describes many of the important parts such as the planetary drive axle, transmission, frame, hoists, etc., and contains specification data on the complete units.

These new Euclid models are improved designs of the same capacity "Eucs" that are widely used for off-the-highway hauling of earth, rock, ore and other materials in construction, mine and quarry work. They have a truck measure capacity of 14.8 cubic yards and are equipped with a diesel engine of 286 or 300 h.p. The 10 speed transmission provides for the speed ranges loaded of 3.1 to 32.4 m.p.h.

Copies of this Euclid folder, form No. 120, may be obtained by writing the company at Cleveland 17, Ohio, or from local distributors of Euclid equipment.

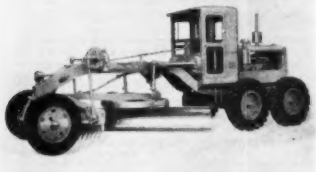
• A new bulletin, just released by Joy Manufacturing Company, Henry W. Oliver Building, Pittsburgh 22, Pa., describes in detail their new line of Model FA chain-and-flight room conveyors. Three new chains for FA conveyors are also included. Eight pages of photographs, dimension prints and specifications are used to illustrate the line. Bulletin LD-200.

• Five Cummins Diesels manufactured by Cummins Engine Company, Inc., at Columbus, Indiana, and 11 standard models of Euclid equipment they power, are described in a 16-page booklet recently published by the Euclid Road Machinery Company, Cleveland, Ohio.

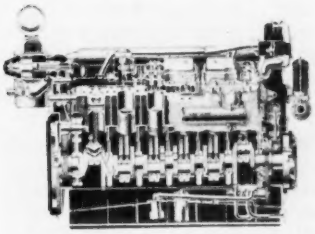
The booklet is entitled "Cummins Powered Euclid Equipment." It describes the 164 hp Model HRB-600; the 175 hp Model HRBB-600; the 200 hp Model NHB-600; the 275 hp Model NHS-600, and the 300 hp Model NHRBS-600 Cummins Diesels in Euclid equipment ranging from the 15-ton Rear-Dump Euclid to the 40-ton Bottom-Dump Euclid Coal Hauler.

Copies may be obtained from all Cummins dealers and Euclid distributors in the United States and Canada, a complete list of which is included in the booklet.

Here is a model view of the new "Caterpillar" DW21 Tractor and Scraper exhibited at the Coal Show in Cleveland, May 14 to 17.



This is the "Caterpillar" No. 12 Motor Grader which was on display at the Coal Show in Cleveland, May 14 to 17.



Here is a cutaway version of the "Caterpillar" D397 Diesel Engine, largest of the "Caterpillar" engine line, exhibited at the Coal Show, Cleveland, Ohio, May 14 to 17.

A new bulletin designed to assist readers in determining the exact condition of their building roofs and in planning repairs, is announced by The Monroe Company, Inc., Cleveland.

The bulletin contains illustrations of virtually every type of roof damage. It explains how and why roofs deteriorate and indicates trouble spots where the first danger signs appear.

Patching and leak-stopping methods are described in detail as are means of resurfacing and renewing old roofs.

For bulletin copies, write The Monroe Company, Inc., 10703 Quebec Ave., Cleveland 6, Ohio. Ask for Form 102-7.

The Joy Manufacturing Company announces availability of a new sixteen page, two-color, bulletin in their complete line of cable-jacket Vulcanizers and supplies. Besides illustrating and describing the very latest type of equipment for patching and repairing Neoprene or rubber covered electric cable—this bulletin contains valuable information on molds versus cable sizes, and vulcanizing procedures.

According to the manufacturer, cable vulcanizers are today's best solution to cable replacement difficulties caused by the increasing amount of rubber and rubber synthetics being used for our re-armament program. They report that only through vulcanizing with heat can repairs be made that match the original cable jacketing for durability, safety and moisture resistance.

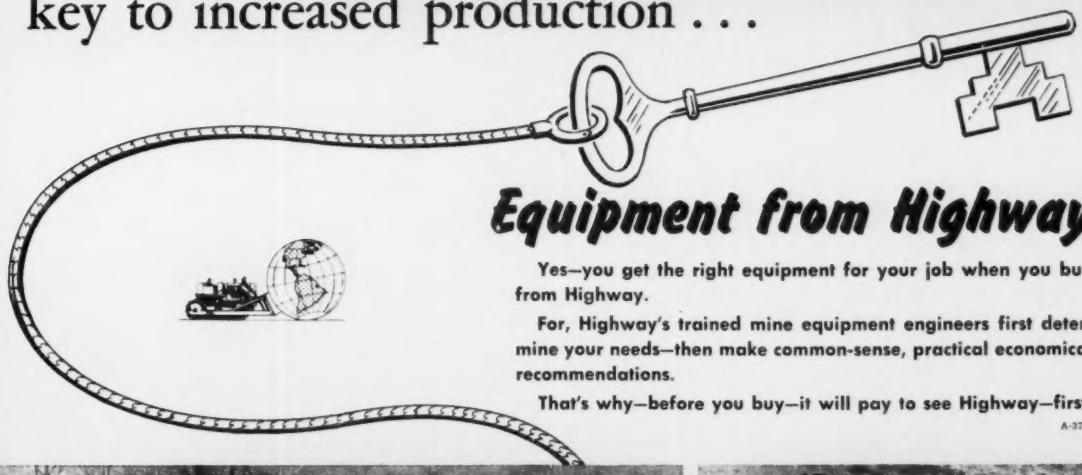
For complete details including a free copy of this new Bulletin numbered RV-106 contact Dept. I-21, Joy Manufacturing Company, Electrical Connector Division, Henry W. Oliver Building, Pittsburgh 22, Pennsylvania.

Advertisers' Index

COAL MINING

JUNE, 1951

key to increased production . . .



Equipment from Highway!

Yes—you get the right equipment for your job when you buy from Highway.

For, Highway's trained mine equipment engineers first determine your needs—then make common-sense, practical economical recommendations.

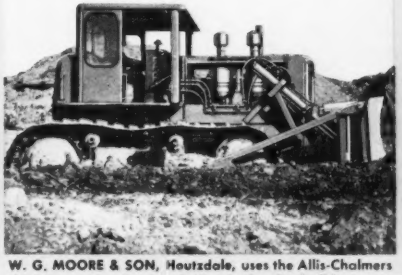
That's why—before you buy—it will pay to see Highway—first!

A-3780

GILLELAND COAL CO., Uniontown, strips with two HD-19s (one with Baker hydraulic dozer, the other with Carco cable dozer) and pushes scrapers on a round-the-clock schedule.

AUGHENBAUGH COAL CO., Clearfield, loads coal with Model 22 Wayne Mobile Shovel.

OMMONWEALTH OF PENNSYLVANIA, Department of nes, backfills old mine pits with Allis-Chalmers -10W equipped with Gar Wood hydraulic angleblade.



W. G. MOORE & SON, Houtzdale, uses the Allis-Chalmers HD-19, equipped with Baker hydraulic bulldozer, to work around the dragline, bunch overburden, clean the coal face, build drainage ditches and roads.

Lima 802 Shovel loads coal for **MOTTERN & THOMPSON, Philipsburg.**

Highway EQUIPMENT COMPANY

6465 Hamilton Ave. Pittsburgh, Pa.

Allis-Chalmers • Jaeger • Baker • Gar Wood • Hough • Master • Thor • Wayne Crane • General Motors Diesel Engines • Lima Shovels, Cranes, Draglines • Mandt • Erie Bins

The "BOOKLET-OF-THE-MONTH"
for every industry that uses petroleum products

Here is a practical cooperative plan that can help you cut controllable costs and offset higher non-controllables. From this single source you can get effective assistance on any problem that involves a petroleum product—any type of petroleum product.

Gulf Periodic Consultation Service makes available to you the regular counsel of one or more trained engineers, backed up by technologists who are skilled in every phase of petroleum science and who have years of experience with practically every type of industrial process and equipment.

This knowledge and experience can be applied profitably to your operating and maintenance problems. In your continuing efforts to increase manufacturing efficiency and profits, here is an important and definite step you can take—at once. Send for your free copy of the booklet which explains this cost-cutting service.

FIFTY YEARS OF SERVICE
1901 GULF 1951
PETROLEUM AND ITS PRODUCTS

Gulf Oil Corporation · Gulf Refining Company CM
Room 722, Gulf Building, Pittsburgh, Pa.

Please send me, without obligation, a copy of the booklet "Gulf Periodic Consultation Service."

Name.....

Company.....

Title.....

Address.....